

ASTRONOMY

Urges Southern Palomar

► THE WORLD should have another telescope like the 200-inch at Mt. Palomar in the Southern Hemisphere, and it is "high time" to start plans for it now, Dr. John B. Irwin, Indiana University astronomy professor, urges.

Financing buildings and equipment for a new international astronomical observatory might be difficult, he says, yet actually cost no more than a "few miles of super-highway." Although such an enterprise would undoubtedly yield practical results, what they would be is no more apparent than where the proverbial fur coat appears in the traveling salesman's expense account, Dr. Irwin points out.

The proposed observatory would have a profound effect on astronomy, Dr. Irwin believes, since the Southern Hemisphere has only two reflecting telescopes larger than 61 inches, although the Northern Hemisphere has six of them. It will soon have seven when the new 120-inch goes into operation at Lick Observatory, Mt. Hamilton, Calif., later this year.

Studies of the skies from the Southern Hemisphere are important because many

heavenly objects cannot be seen except from below the equator. Included are the brightest and most interesting parts of the Milky Way, the giant pinwheel of billions of stars in which the sun, the earth and other planets are located.

Also included are the Milky Way's two nearest neighbors in space, the Large and Small Magellanic Clouds, which offer a "unique opportunity" for observing very bright stars. The larger cloud contains 1,000 stars, each of which has more than 15,000 times the brightness of the sun.

For studying the Magellanic Clouds, Dr. Irwin calculates that a 200-inch reflector down south would be as effective as a 2,000-inch instrument in the north, since these galaxies are only one-tenth as far distant as the next nearest galaxy.

An international observatory would give U. S. astronomers from the Midwest and East, as well as many Europeans, use of large instruments to which they now have only limited access. Dr. Irwin's arguments for the new Mt. Palomar appear in the *Scientific Monthly* (March.)

Science News Letter, March 16, 1957

GEOPHYSICS

Chart Storm Activity

► THE RADIO SIGNALS sent out by some 50,000 thunderstorms daily will soon be charted on a world-wide basis at 16 stations now being set up under the supervision of three scientists.

The aim is to learn more about radio interference and how radio waves travel through the atmosphere. The project is part of the International Geophysical Year, a world-wide look at the earth as a planet that starts July 1.

William Q. Crichlow, Robert T. Disney and Forrest Fulton of the Boulder Laboratories of the National Bureau of Standards, Boulder, Colo., have designed special radio noise recording equipment for the study. Their atmospheric noise recorders will operate continuously to chart the intensity and variations of thunderstorm signals broadcast in the range from 15 kilocycles to 20 megacycles.

Although some interfering man-made noises will also be recorded, the scientists are choosing sites as far away from the din of man and machines as possible.

One station is installed at Marie Byrd Base in the Antarctic to gather information on how radio waves travel long distances through the atmosphere. Since it is inside the auroral zone, the belt circling both poles in which auroras most frequently appear, the Antarctic recorder will also provide information about this zone's effect on radio waves passing through it.

Other stations will be in operation at

Maui, T. H.; Thule, Greenland; Balboa, Canal Zone; Accra, Ghana, Africa; Cook, Australia; Johannesburg, Union of South Africa; Rabat, Morocco; San Jose dos Campas, Brazil; Singapore, Stockholm, Tokyo and in India.

All data from the various stations will be forwarded to the Boulder Laboratories for analysis. Results of the study will provide an engineering basis for assigning frequencies to stations.

Commercial users of radio and the armed forces must know what frequencies are best for use at a given time and place.

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MEDICINE

Microphone Placed Inside Heart to Record Sounds

► A TINY MICROPHONE that goes inside the heart to record the beating sounds and gives valuable new medical information has been developed by John D. Wallace and James R. Brown Jr., U. S. Naval Air Development Center, Johnsville, Pa., and Drs. David H. Lewis and George W. Deitz, Philadelphia General Hospital, Philadelphia.

The sounding technique, called intracardiac phonocardiology, uses a small catheter like that used for the pressure recordings taken during regular heart catheterization. A microphone, measuring less than a sixteenth of an inch in diameter, is

placed in the tip of the catheter tube and guided into the various chambers of the heart. The sounds picked up there are then amplified and recorded on a tape recorder.

The first attempt of this technique was reported by Japanese scientists in 1954, but the miniature microphone used was not satisfactory.

The present microphone uses a sound-sensitive element of barium titanate that was developed for sonar equipment in undersea warfare. The studies are reported in the *Journal of the Acoustical Society of America* (Jan.).

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